

Pyrocap important issues to include.

Application of heat to a fuel source releases gas vapor from said fuel, this gas mixes with oxygen thereby creating a fuel that will burn. The heat generated will then act upon the remaining fuel thereby allowing the off-gassing/burning process to continue. Pyrocap stops this off-gassing process by rearranging the fuel molecules and cooling the fuel.

Pretreatment;

As Pyrocap stops the off-gassing process it is also capable of stopping this process before a source of ignition ignites a fire. Therefore, one of the important things to remember about Pyrocap is that when it is mixed with fuel in a pretreatment, fuel becomes inert.

Fuel sources include class A such as wood and paper, class B which are mostly liquid petroleum such as gasoline, oils, tar, paint thinners, etc. Class D metals such as titanium and magnesium which by the way cannot be put out with water as they burn so hot that they break the bonds in water where the hydrogen and oxygen become fuel as well. Therefore adding water to a metal fire is the same as adding fuel to these types of fire.

Points for discussion.

Pyrocap can be used with saltwater or freshwater as its carrier.

Pyrocap is an easy material to include in nearly all firefighting systems. Firefighters apply solution just as they would plain water with no special equipment. Pyrocap can be batch mixed in a tank or other storage vessel, stored in a container as a concentrate and proportioned as needed (foam system on a truck). When Pyrocap is stored in solution for more than a few months we will insist that De Ionized water is used. We find that tap water or other less than pure waters will begin to interact with Pyrocap.

Pyrocap is Ph neutral so it will not damage pumps, valves, appliances, bunker gear or any other equipment. Therefore when Pyrocap is deployed or stored extensive clean up is not necessary, unlike acid based foam materials. Pyrocap will also protect people and animals as it is Ph neutral.

With AFFF materials there are many issues that need to be considered such as pump pressure, hose length and foam nozzles. The wind will blow foam away from its target even after it is applied and rain can also be an issue. Foam then needs to be reapplied as needed to maintain the blanket. None of these issues apply to Pyrocap.

Lastly, foam will need a smooth undisturbed surface on which to build a blanket. As discussed Pyrocap does not need any certain surface or a blanket to treat fuel.

There is no special equipment needed. The system in place will apply Pyrocap often with little to no modification.

Class D metals are common in pyrotechnics such as road flares. While a road flare will burn freely when it gets wet, like a police officer directing traffic in the rain, Pyrocap will extinguish road flares. These

same types of self-oxidizing metals such as Magnesium are common in munitions and other pyrotechnics. This is one avenue we would like to explore and utilize some research experiments with Government entities. I am confident based on my experience that Pyrocap will perform in places where other materials would not.

Economics;

\*Pyrocap stops fire very quickly. Damage from the fire is often the smaller part of the damage that is done. The more quickly fire stops the less water is used, which means, less damage from water and smoke, less clean up (overhaul), less time on location.

Pyrocap's shelf life is very long, a minimum of 10 years. We take product we made 20 years ago down off the shelf and test it occasionally. It works every time. According to the foam manufactures own labels foam must be replaced as often as once per year. (See their labels for exact dates and times) why would want to buy a product with such a limited shelf life.

When fire goes out problems start to go away.

Clean up; Pyrocap cleans up with water. Wash the affected areas

- Neutral PH
- Stops off-gassing
- Cool fuels
- Neutralize fuels
- Pre-treat fuels
- Many application options

Disposal of by-products;

Small quantities can be mopped up or flushed with soap and water. Larger quantities can be taken to disposal sites with minimal cost, as low toxicity will save cost.

Clean up/ disposal

When fuel is rendered inert, toxicity is gone, even the most simple equipment can be used.

Personnel protective/ safety issues will change for the better.

Disposal facilities will take byproducts at less cost.

Things I do not call it,

Foam; does not work like, does not act like, I tell customers we are not a "me too" product.

Pyrocap is a next-generation product that has capabilities far beyond anything foam can do.

Chemical; chemicals are bad for the environment, firefighters and equipment. AAF foam is highly acidic and causes all sorts of issues, like rusting equipment and burning skin. Pyrocap is Ph neutral, environmentally friendly and will not burn skin or rust equipment.

Wetting agent, wet water agent, While Pyrocap does these things it is so much more.

Scenarios;

Confined spaces.

Issues;

Powder materials become airborne creating breathing issues for victims. With Pyrocap liquid, there is no dust.

Heat levels stay high. Pyrocap in combination with water cools, no heat no fire.

Liquid Fuel spills can be treated on the scene and disposed of within local guidelines.

Environmental issues.

Pyrocap is not toxic to the environment.

Is Ph neutral

Made from food-grade materials

Is not harmful to land or Marine life

Mixing ratios

We recommend the following mixing ratios

1% General purpose fire suppression, structures. Class A materials

3% Liquid fuels, such as gasoline, oil derivatives. Class B materials

6% Metals such as titanium and magnesium Class D materials

The most important thing to keep in mind is that a certain amount of Pyrocap will handle a certain BTU load. If it is used in a percentage other than what is generally called for it will take more or less solution to extinguish the fire. In other words, higher concentrations will work more quickly with less water, lower concentrations may take a little longer.

Mixes easily

Stays in suspension

Fire apparatus;  
Batch mix in booster supply tanks  
Use proportioner  
Include in onboard "foam" tanks

Fixed systems  
Add to supply tanks  
Proportion from Skid totes

Air tankers;  
Add Pyrocap to water as it is loaded on the airplane  
See acceptance letters from agencies.

Helicopter drop buckets;  
Put small tank onboard with a hose to the drop bucket. A small pump can deliver Pyrocap to each bucket full of water after it is lifted from its source.  
See acceptance letters from agencies.